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Type: Invited Presentation

Final Abstract Number: 01.001
Session: Plenary Lecture 1
Date: Thursday, June 14, 2012
Time: 09:00-09:45
Room: Plenary Hall

Dengue, urbanization and globalization: The unholy trinity of the 21st century

D. Gubler

Duke-NUS Graduate Medical School, Singapore, Singapore

Body: Dengue is the most important arboviral disease of humans with over half of the world's population living in areas of risk. The frequency and magnitude of epidemic dengue have increased dramatically in the past 40 years as the viruses and the mosquito vectors have both expanded geographically in the tropical regions of the world. There are many factors that have contributed to this emergence of epidemic dengue, but only three have been the principal drivers: 1) urbanization, 2) globalization and 3) lack of effective mosquito control. The dengue viruses have fully adapted to a human-*Aedes aegypti*-human transmission cycle, in the large urban centers of the tropics, where crowded human populations live in intimate association with equally large mosquito populations. This setting provides the ideal home for maintenance of the viruses and the periodic generation of epidemic strains. These cities all have modern airports through which 10s of millions of passengers pass each year, providing the ideal mechanism for transportation of viruses to new cities, regions and continents where there is little or no effective mosquito control. The result is epidemic dengue. This paper will discuss this unholy trinity of drivers, along with disease burden, prevention and control, and prospects for the future.

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Type: Invited Presentation

Final Abstract Number: 02.001
Session: International Perspectives on Infection Control
Date: Thursday, June 14, 2012
Time: 10:15-12:15
Room: Ballroom A

Global infection control: A US perspective on health care associated infections

R. Wenzel

University of Virginia, Richmond, USA

Health care associated infections occur at a rate of 5%-10% in developed nations and up to 50% in developing countries. The global prevalence of health care associated infections has been estimated at 1.5 million. Especially challenging is the fact that antibiotic-resistant pathogens - even if originating in the community - become hospital pathogens with extraordinary capacity for global transmission. Current issues related to global infection control include an increasingly populated world challenged by poverty, hunger, malnutrition and limited expertise to improve health in the community, clinics and hospitals; rising rates of human, cargo and animal traffic crossing international borders, creating opportunities for transmission of pathogens globally; an an increasing and alarming rate of antibiotic resistance challenged by fewer pharmaceutical companies investing in anti-infective discovery.

With Gram positive organisms, infection control is the major strategy, whereas with infections caused by Gram negative rods, antibiotic stewardship plays a larger role. Key investments need to be made in maintaining effective horizontal infection control programs; establishing global surveillance networks; expanding rapid diagnostics and whole gene sequencing for fingerprinting bacteria; developing vaccines for major bacterial pathogens; and a global commitment to reducing poverty.

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